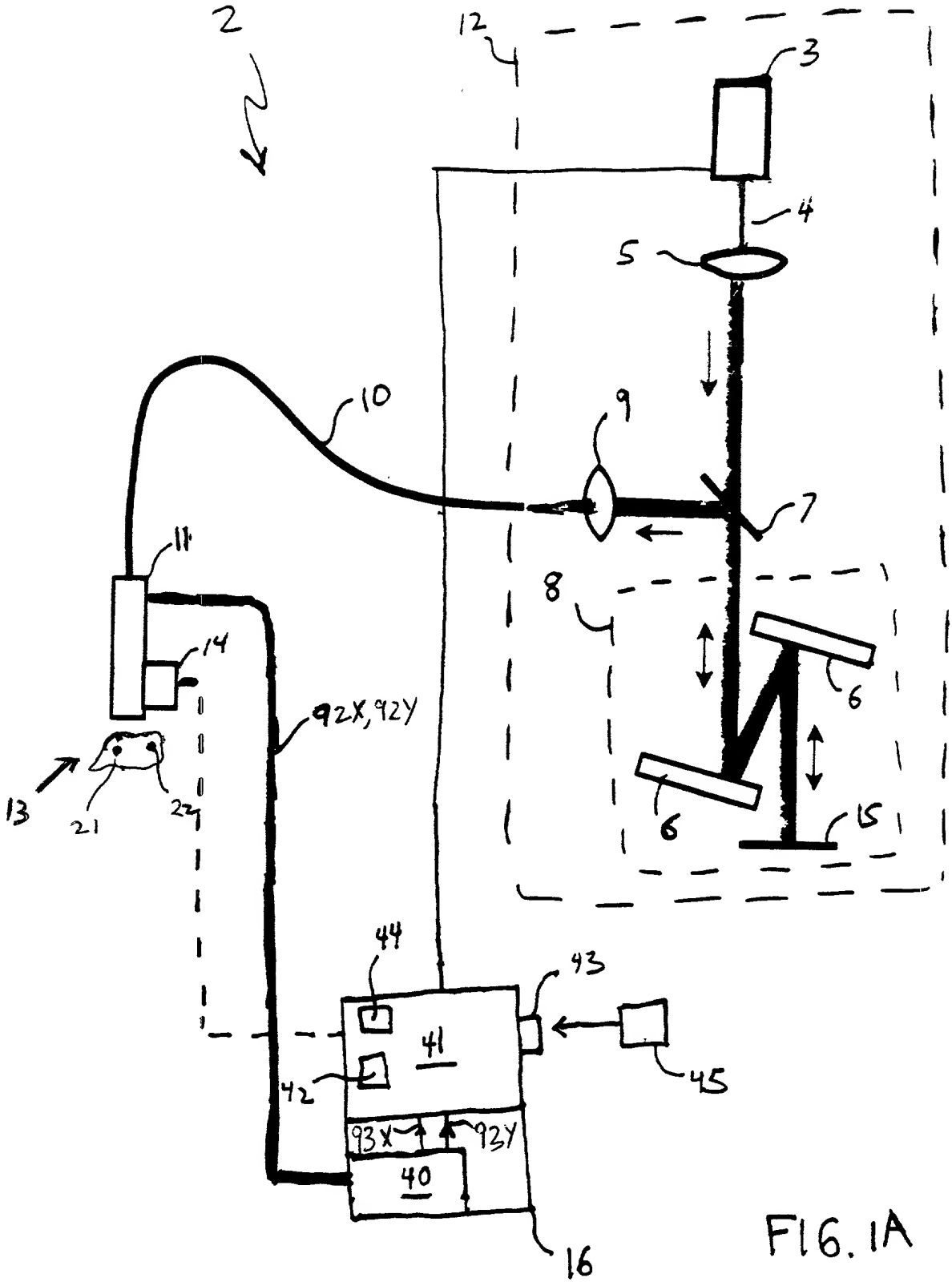

2
12
3
4
5
10
9
7
11
8
14
6
92X, 92Y
13
21
22
6
15
44
43
41
45
42
93X
93Y
40
16

FIG. 1A

EP 0 958 807 A2

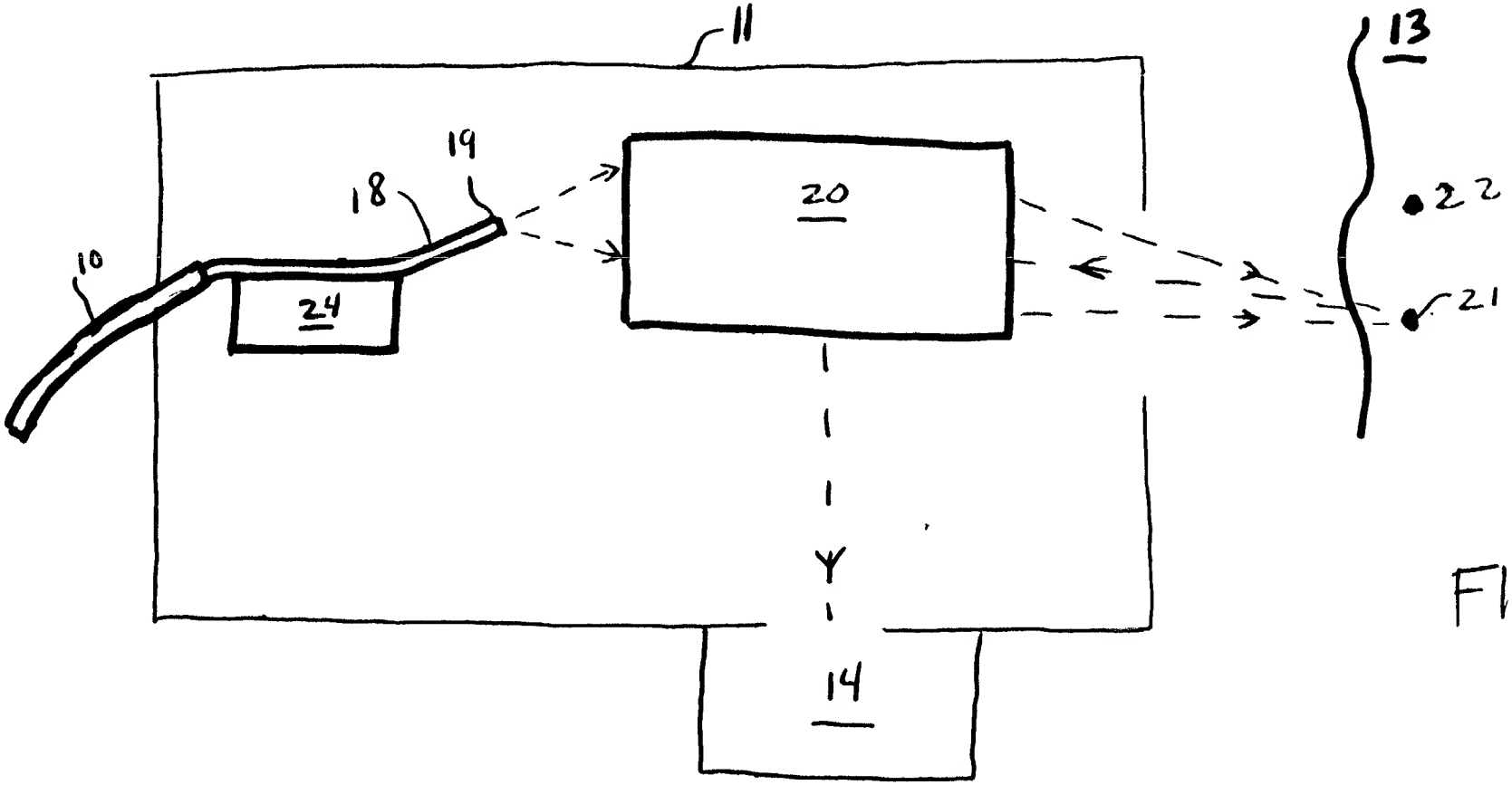


FIG. 2

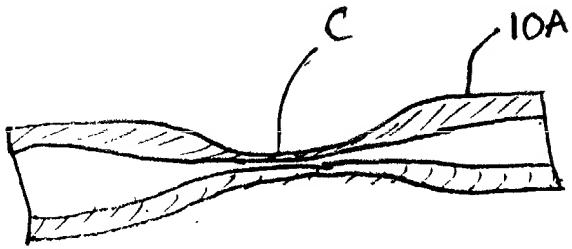


FIG. 1B

FIG. 3

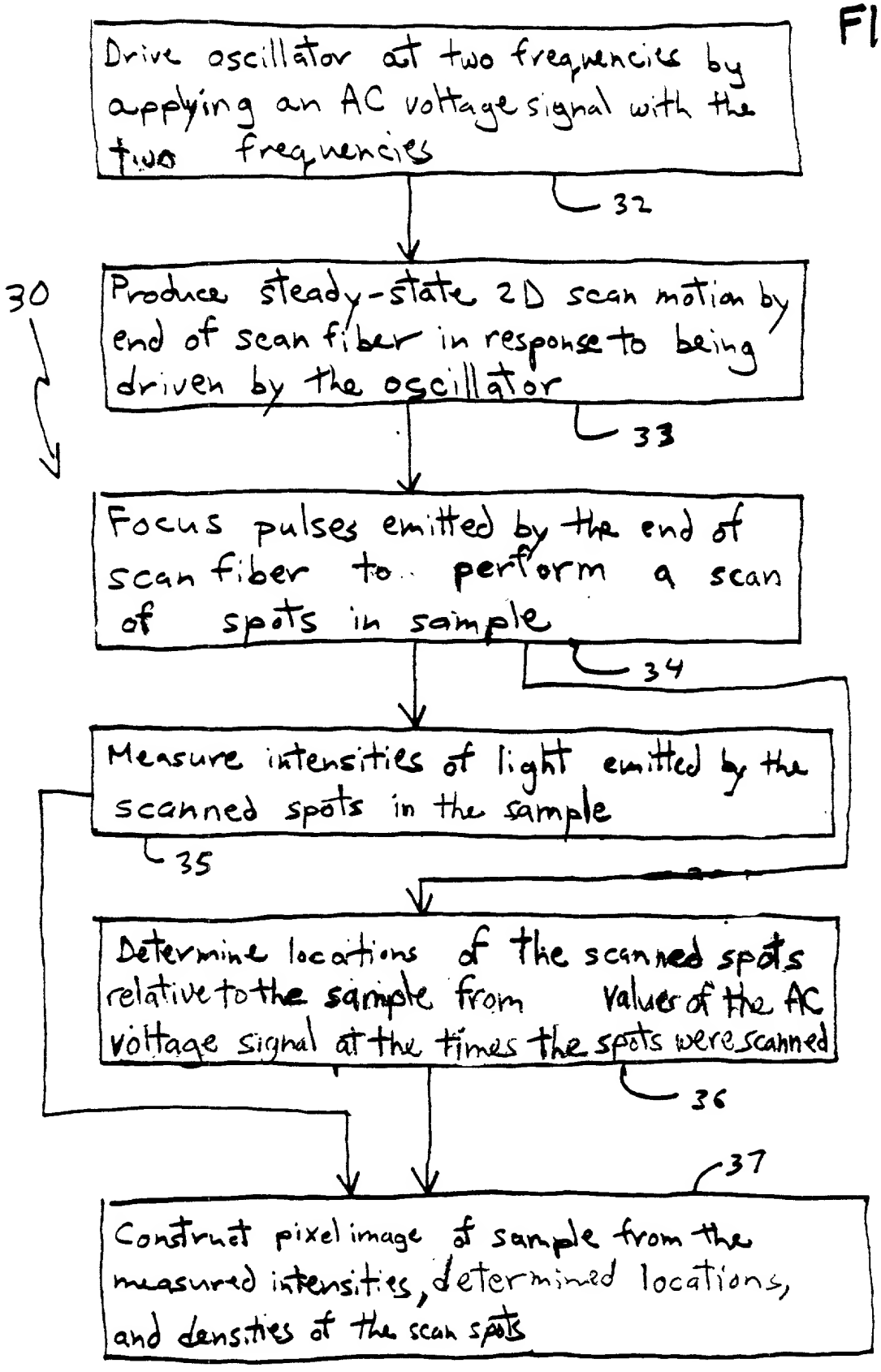
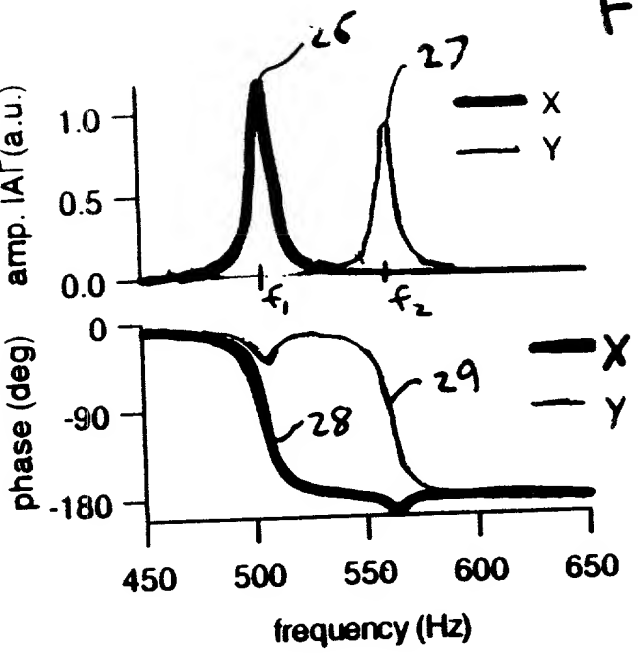

Drive oscillator at two frequencies by applying an AC voltage signal with the two frequencies
32
30
Produce steady-state 2D scan motion by end of scan fiber in response to being driven by the oscillator
33
Focus pulses emitted by the end of scan fiber to perform a scan of spots in sample
34
Measure intensities of light emitted by the scanned spots in the sample
35
Determine locations of the scanned spots relative to the sample from values of the AC voltage signal at the times the spots were scanned
36
37
Construct pixel image of sample from the measured intensities, determined locations, and densities of the scan spots

FIG.5


26
27
X
Y
amp. $|A|^2$ (a.u.)
1.0
0.5
0.0
f_1
f_2
phase (deg)
0
-90
-180
28
29
X
Y
450
500
550
600
650
frequency (Hz)

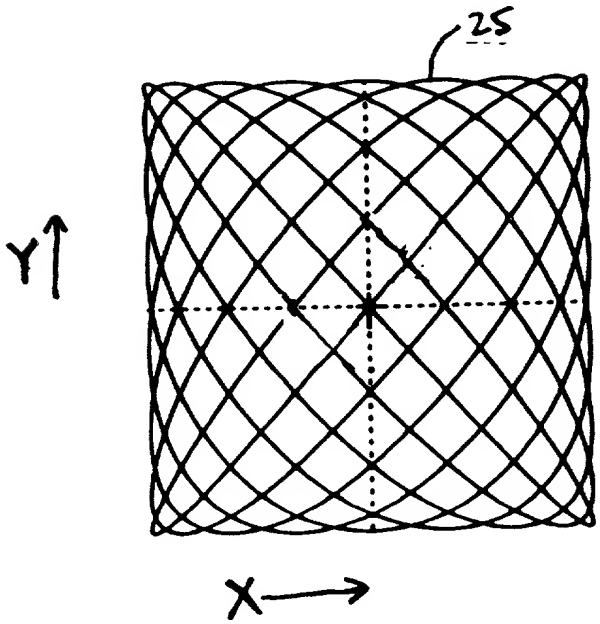

25
Y
X

FIG.4

EP 0 950 881 A2

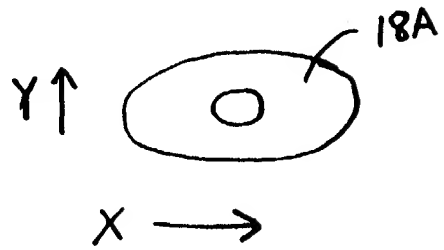


FIG. 6A

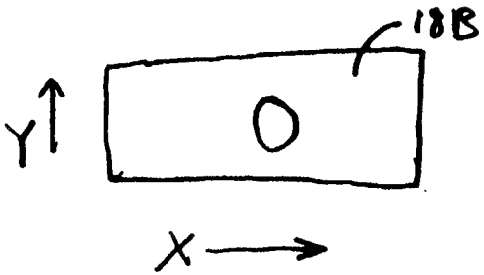


FIG. 6B

FIG. 6C

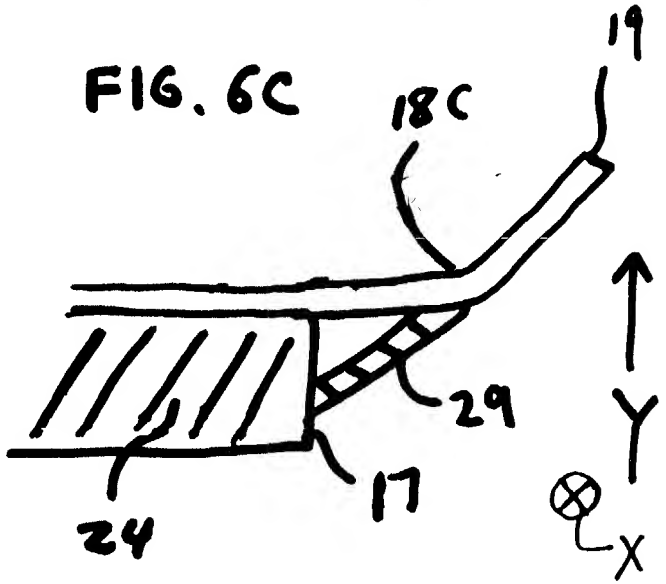
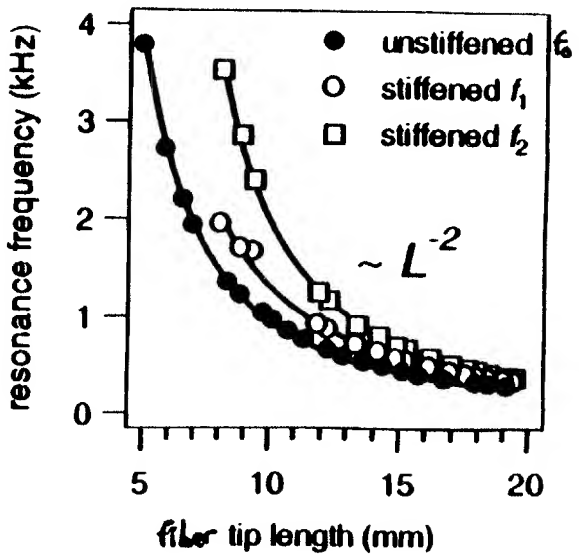


FIG. 6D



US005867595A

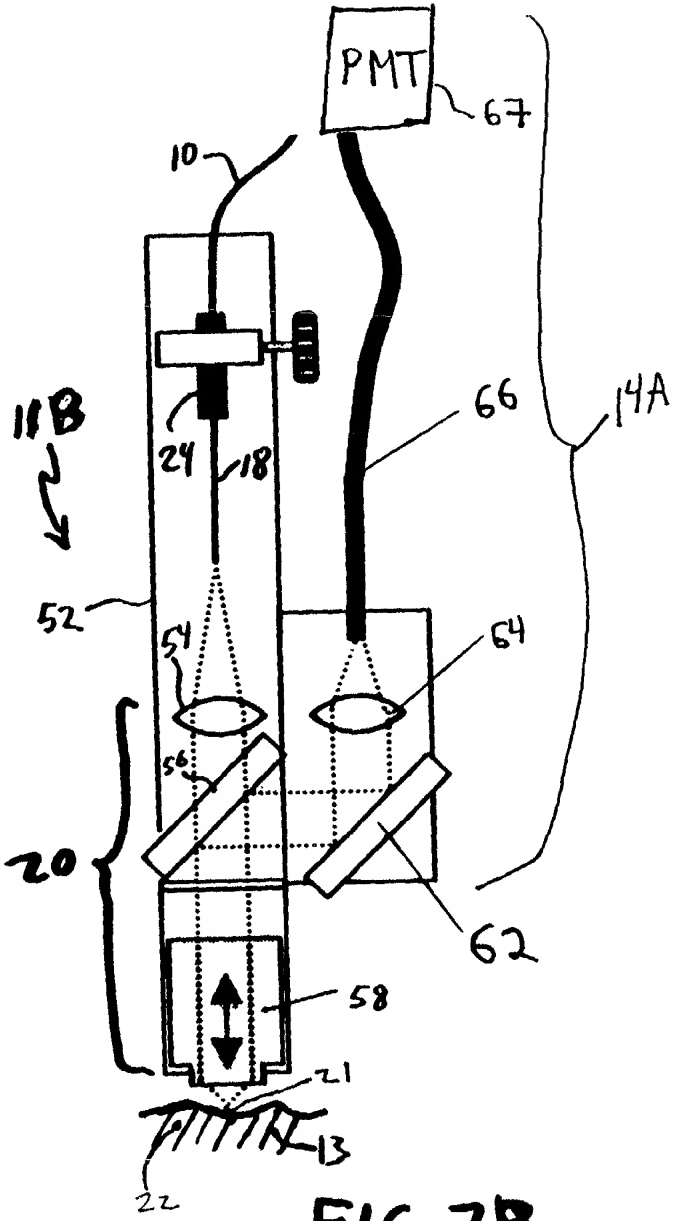


FIG. 7B

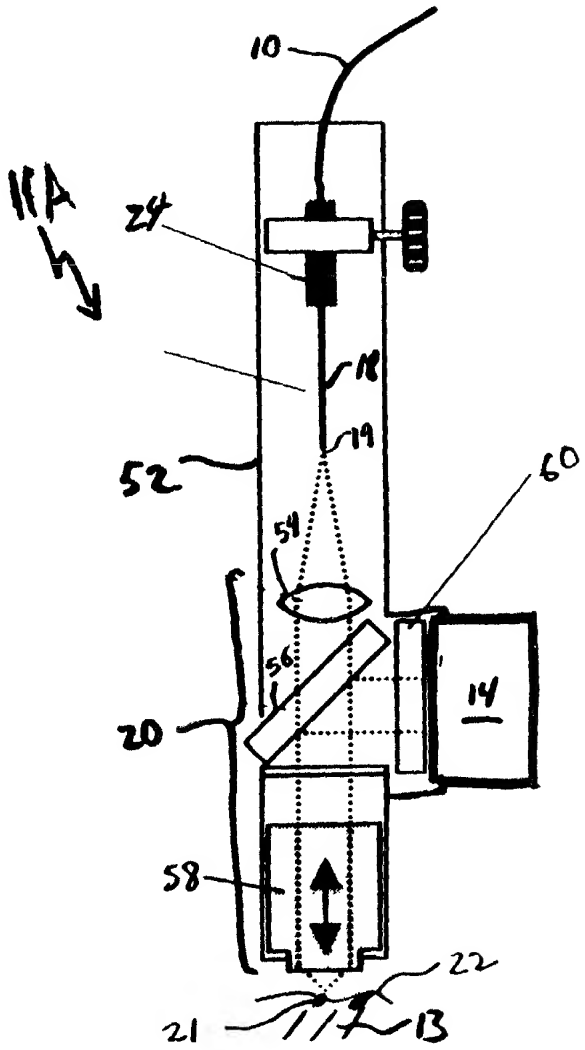


FIG. 7A

US5081356

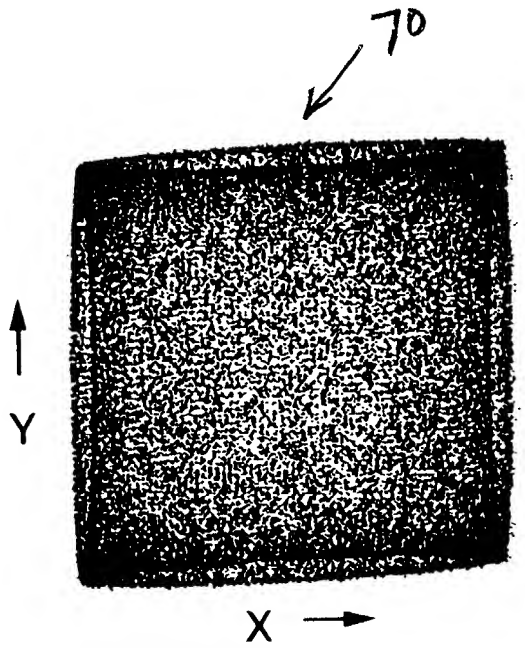


FIG. 8

FIG. 13A

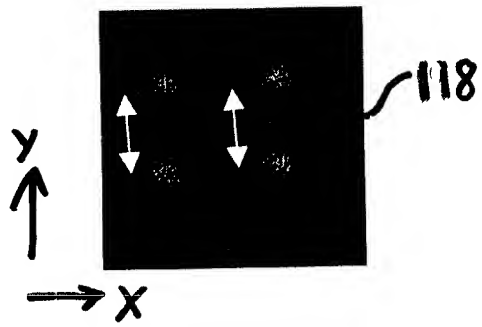


FIG. 13B

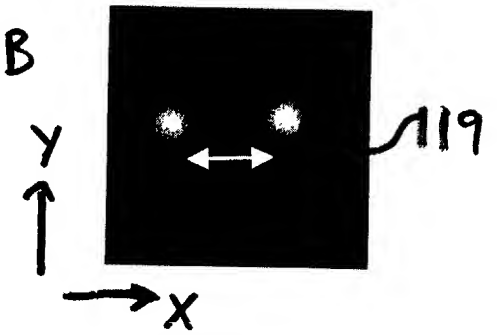


FIG. 13C

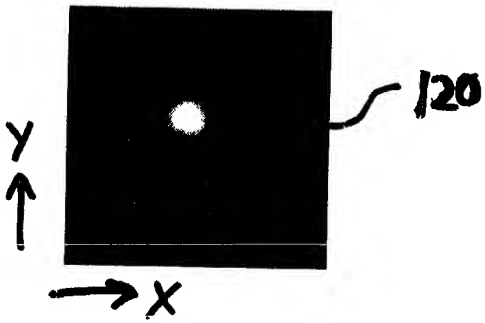
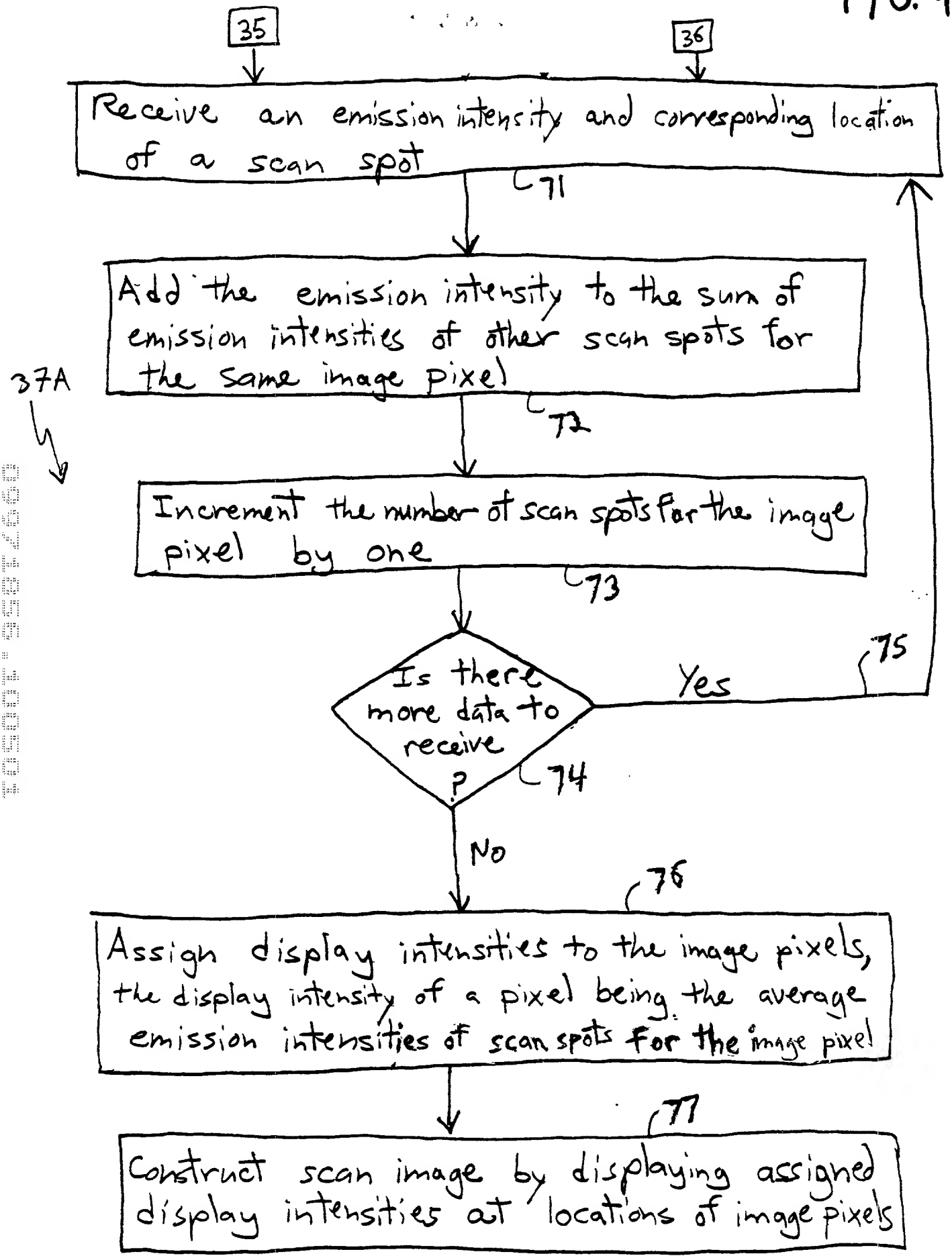


FIG. 9A


35
36
Receive an emission intensity and corresponding location of a scan spot
71
Add the emission intensity to the sum of emission intensities of other scan spots for the same image pixel
37A
72
Increment the number of scan spots for the image pixel by one
73
Is there more data to receive ?
74
Yes
75
No
76
Assign display intensities to the image pixels, the display intensity of a pixel being the average emission intensities of scan spots for the image pixel
77
Construct scan image by displaying assigned display intensities at locations of image pixels

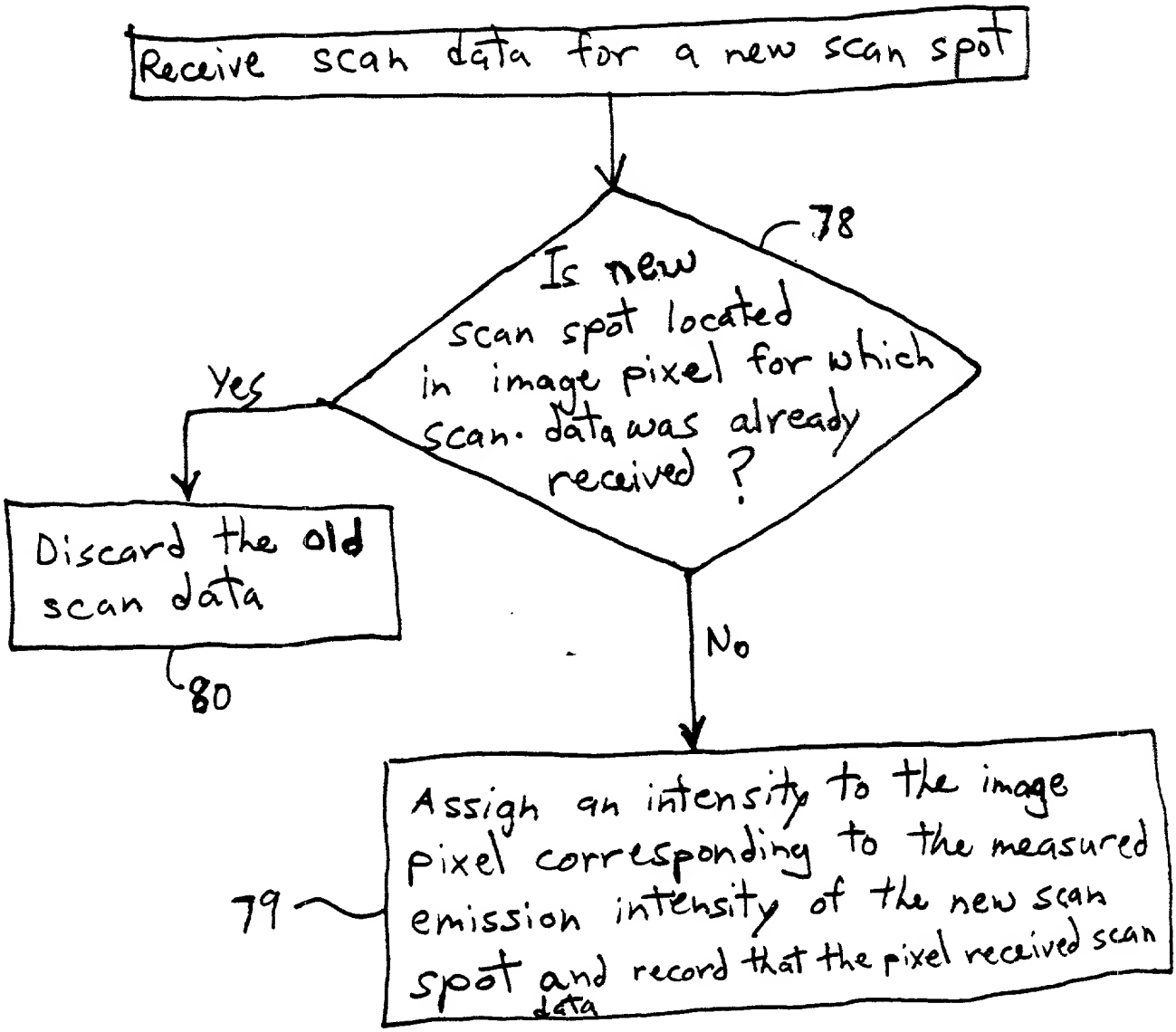

Receive scan data for a new scan spot
78
Is new scan spot located in image pixel for which scan. data was already received ?
Yes
No
Discard the old scan data
80
79
Assign an intensity to the image pixel corresponding to the measured emission intensity of the new scan spot and record that the pixel received scan data
37B

FIG. 9B

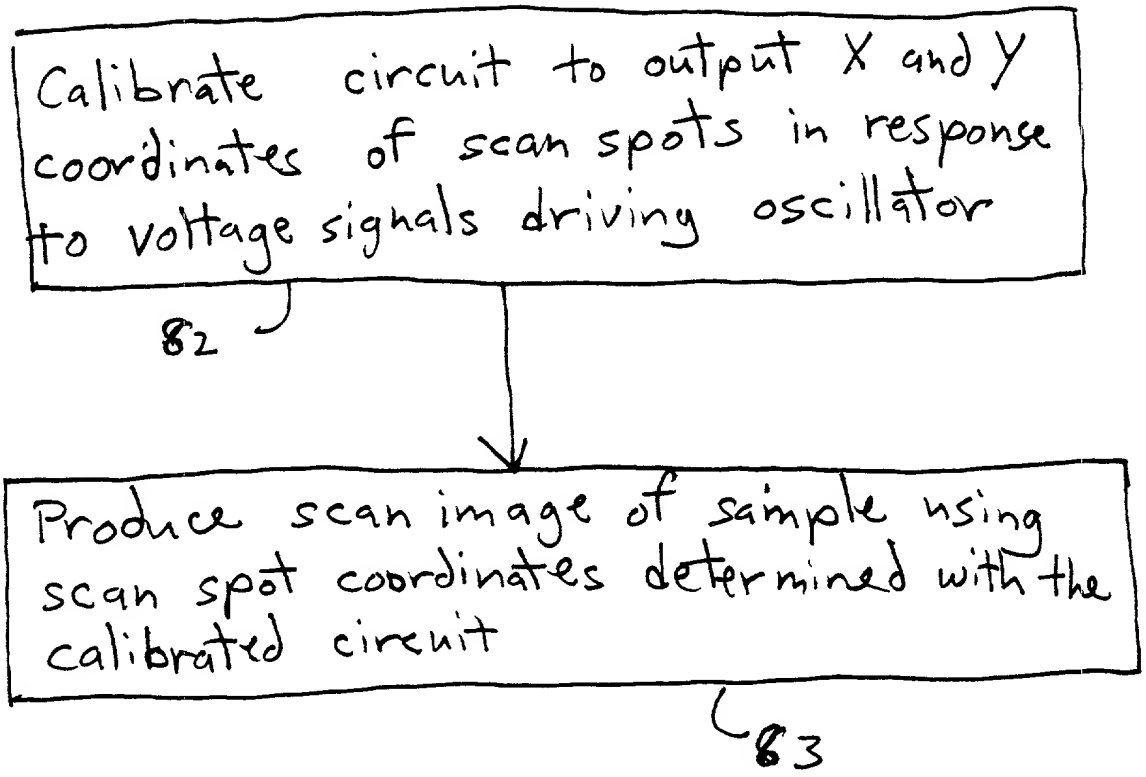

Calibrate circuit to output X and Y coordinates of scan spots in response to voltage signals driving oscillator
82
Produce scan image of sample using scan spot coordinates determined with the calibrated circuit
83
81

FIG. 10

T05001 - 95817660

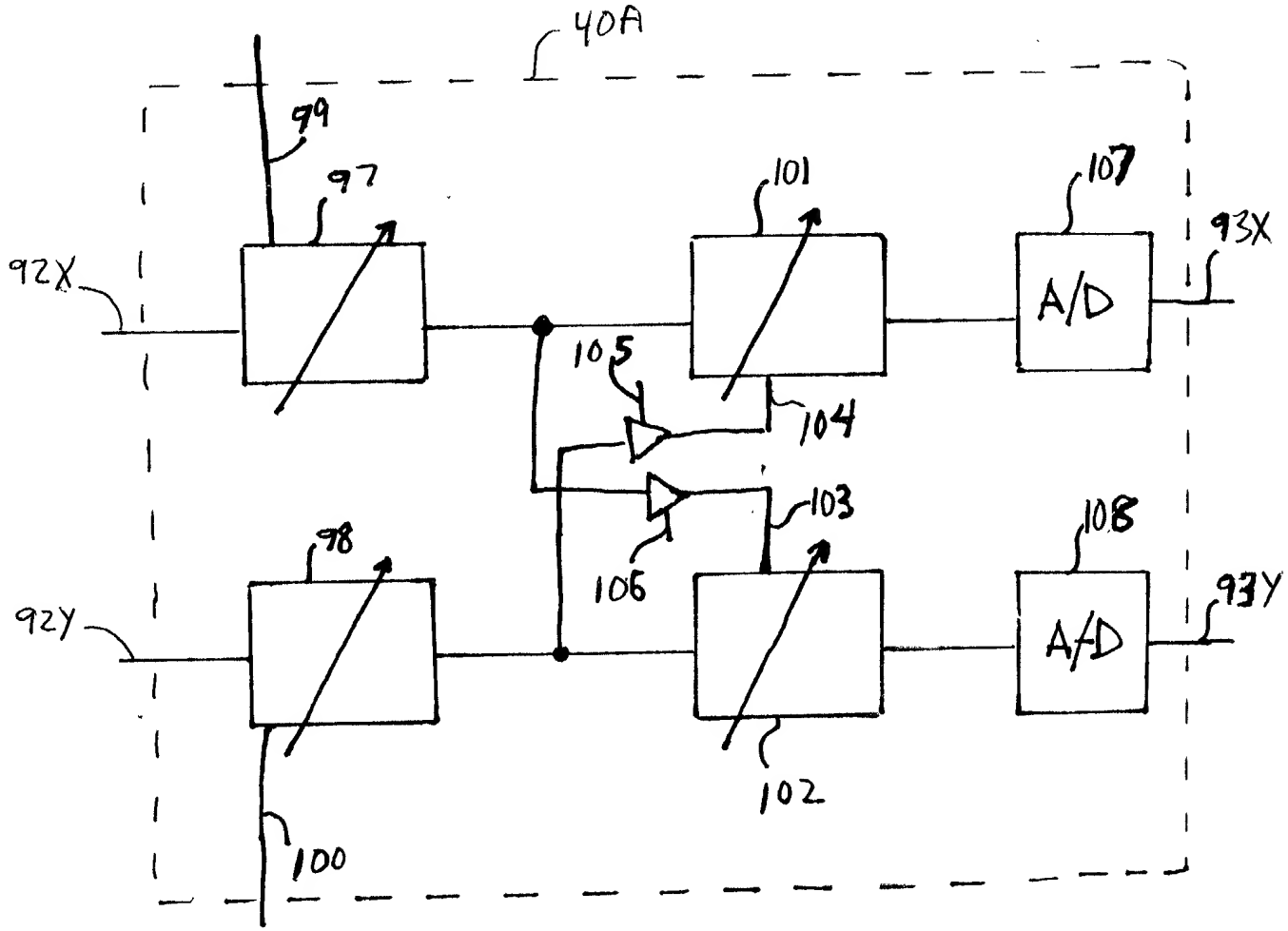


FIG. 11A

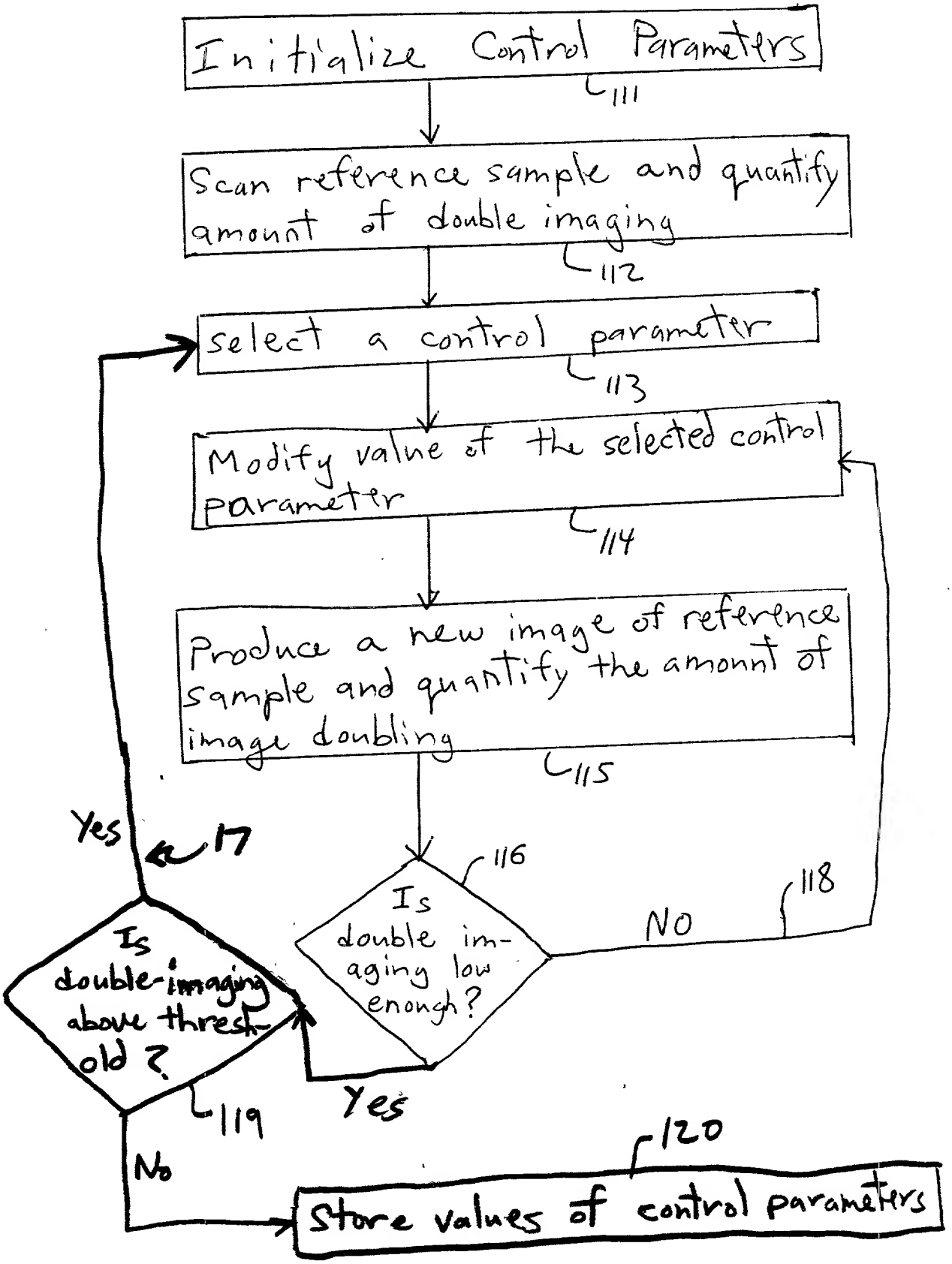

Initialize Control Parameters
111
Scan reference sample and quantify amount of double imaging
112
select a control parameter
113
Modify value of the selected control parameter
114
Produce a new image of reference sample and quantify the amount of image doubling
115
116
Is double imaging low enough?
NO
118
Yes
117
Is double-imaging above threshold?
119
Yes
No
120
Store values of control parameters

FIG. 12